STEFFEN, ROBERTSON AND KIRSTEN (CANADA) INC. Consulting Engineers
Suite 800, 580 Hornby Street, Vancouver, B C Canada V6C 3B6
Phone: (604) 681-4196 Fax: (604) 687-5532

January 15, 1993
Project Number S113101,

Kennecott Corporation, SLC
Barneys Canyon Mine
P.O. Box 311
8200 South 9600 West
Bingham Canyon, Utah
84006-0311

Attention: Mr. D. Hodson, Mine Manager

RE: ARD TEST RESULTS FROM THE BARNEYS CANYON AND MELCO DEPOSITS

This letter presents a summary of the test results and the interpretation used to evaluate the potential for acid generation of rock samples collected in the Barneys Canyon Pit, the Melco Pit, and the South Barneys Canyon Pits. The testing was done in two phases consisting of a static testing program on samples from the 4 pits, and kinetic testing on selected samples that were classified as having a marginal potential to generate acid. Most of the static test results were summarized previously in Kennecott's "Notice of Intention to Revise Mining Operations, Barneys Canyon Project" dated October 1, 1992. Some additional analyses of sulfur species have been recently compiled and are reported herein.

All the test data we have reviewed was generated by Core Laboratories in Denver.

Static Test Program

For the acid base accounting tests, standard procedures, based on the documented EPA test procedure (Sobek *et al.*, 1978) were used. As the standard procedure does not take into consideration non-sulfide species in the calculation of AP, a selection of samples from the South Barneys Canyon Pits were tested for sulfur speciation to refine the results.

Acid base account tests are used to define the balance between potentially acid generating minerals (sulfides) and potentially acid consuming minerals (typically carbonates) in a sample. Theoretically a sample will only generate acidic leachate if the potential for acid generation (AP) exceeds the neutralization potential, (NP) or has a NP/AP ratio of less than 1. However, in a rock pile, the physical distribution of the potentially acid generating and acid neutralizing minerals may be sufficiently variable that acidic seeps may develop for NP/AP ratios greater than 1. For mine rock piles, it is generally accepted that samples with an NP/AP of less than 3:1 (but greater than 1) there is still uncertainty as to the potential for acid generation. It is our opinion that where the sulfide and base mineralization is disseminated fairly uniformly in the rock mass (as is the case at Barneys Canyon) and is not concentrated on joints, that this ratio can be reduced to 2:1. An additional index based on NNP is also used, where samples in the range of +20 to -20 kg $CaCO_3$ equivalent/tonne are in this uncertain range. If a sample falls within the uncertain range, kinetic testing is generally required to determine the likelihood for contaminant release and acid generation. In addition, where sulfide sulfur is low (generally less than 0.05%) it is considered that the potential for acid generation is insignificant, even if no NP is available.

The test results have been compiled and are presented by pit area in Appendix A, Tables A1 to A4. Please note that the data is discussed and presented as a net neutralization potential (NNP) rather than a net acid generation potential (AGP) and a ratio of NP/AP is used in the assessment.

Barneys Canyon Deposit +

A temporary sulfide stockpile and a mine waste dump are being developed. The rock being placed in the waste dump can be classified as either oxide or sulfide waste and is clearly distinguishable by its color. Estimates provided by the Barneys Canyon mine personnel are that the oxide waste represents over 95% of the waste produced in the pit.

Six samples, consisting of 3 oxide waste rock samples from the pit, and 3 sulfide rock samples from the temporary sulfide stockpile, were collected from the Barneys Canyon pit.

Two of the three sulfide waste samples were clearly acid consuming, with NP/AP ratios of greater than 3:1. The third sample, was in the range where the potential to generate acid cannot be determined by static tests alone. This sample has an NP/AP ratio of 1.3:1. The total sulfur content of these samples ranged from 1.1 to 1.7 percent. However any acid generation potential is balanced by a very high neutralization potential for all the samples tested, in the range of 69 to 249 kg $CaCO_3$ equivalent/tonne. The nature of the host rocks (dolomitic and calcareous sediments), explains the high NP measured in these samples. These samples indicate that two thirds of the sulfide waste is strongly acid consuming and one third has a low to moderate potential to generate acidity over the long term. When well blended in the temporary sulfide stockpile, such a mixture will not be acid generating, over the period (a few years) that the temporary sulfide stockpile will be maintained.

The oxide waste samples were all clearly acid consuming, with NP/AP ratios greatly exceeding the recommended 3:1 ratio. Two of the samples contained an insignificant amount of sulfur and therefore have little potential to oxidize, the third sample contained 1.2 percent sulfur. The neutralization potentials for all the samples were very high, ranging from 212 to 235 kg $CaCO_3$ equivalent/tonne. These samples indicate that this material is strongly acid consuming.

The sulfide waste contained in the waste dump represents less than 5 percent of all waste. With such a small portion of mainly acid consuming sulfide waste evenly distributed within such strongly acid consuming oxide waste, the blend will be non-acid generating.

Melco Deposit +

The existing temporary sulfide stockpile and mine waste dump will be expanded by additional mining. Barneys Canyon mine personnel have indicated that the sulfide waste represents less than 5 percent of the total waste that will be produced.

Twelve samples, consisting of 6 sulfide samples from the temporary sulfide stockpile and 6 oxide samples from the pit were collected from the Melco deposit.

All of the Melco sulfide samples are clearly acid generating, based on total sulfur contents. Sulfur speciation was not done on these samples. It is however expected that the samples would still be net acid generating even if a significant portion of the sulfur is present as sulfate (non-reactive form), as only one of the samples contained a measurable neutralization potential. Based on the geologic information available to us, it is not surprising that the sulfide bearing rocks at the Melco mine site are barren of NP. Along with the mineralization, alteration of the host rocks as reported by mine geologists consist of a decalcification, or replacement of carbonate minerals by other unspecified minerals. This alteration was not noted in the oxide rock.

The temporary sulfide stockpile will be acid generating and will require acid rock drainage control measures, as presently agreed with the Division of Water Quality, to prevent either generation or migration of contaminated drainage.

Four of the oxide samples had significant neutralization potentials, in the range of 23 to 85 kg $CaCO_3$ equivalent/tonne. Two oxide samples had low neutralization potentials, with values of 0.6 and 4.2 kg $CaCO_3$ equivalent/tonne respectively. The total sulfur content was however low for all the samples tested, with sulfur values ranging between 0.01 and 0.22 percent. Five of the 6 samples were clearly acid consuming, with NP/AP ratios of greater than 6.7:1. The remaining sample is classified as a net acid generator, based on the total sulfur content. It is however likely that some of this sulfur is present as sulfate and therefore not available to oxidize and generate acid and therefore at the relatively low total sulfur content, a reclassification of this sample may be possible. Sulfur speciation was not conducted on this sample.

These samples indicate that a well blended waste dump with less than 5 percent sulfides will not generate acidic drainage. It is recommended that additional samples be taken to confirm the spatial distribution and proportions of the waste types.

South Barneys Canyon - North Deposit

A waste dump will be developed for the mine waste from this deposit. A total of 19 samples from the South Barneys Canyon, North Deposit were tested.

The total sulfur content of all the samples tested was very low, typically in the range of 0.01 to 0.03 percent, with one sample with a value of 0.11 percent. A sulfur speciation test done on the sample with the highest sulfur content indicated that all the sulfur was present as sulfide. The neutralization potential of the samples varied significantly, with values ranging from 0 to 981 kg $CaCO_3$ equivalent/tonne reflecting the sandstone or dolomitic host rock. The median NP was 14.5 kg $CaCO_3$ equivalent/tonne. High values were consistently measured for samples classified as dolomite. Only two of the samples could not be classified as net acid consumers. Of these one sample was barren of both sulfur and NP, and the other was in the range where the potential for acid generation could not be conclusively determined using static tests. Considering the low sulfur content and appreciable acid consuming capacity it is concluded that a well blended waste rock from this deposit would not be acid generating.

South Barneys Canyon - South Deposit ?

A waste dump will be developed for this open pit. A total of 29 samples from the South Barneys Canyon, South Deposit were tested.

One sample was classified as sulfide waste rock and was clearly acid generating with an NNP of -273.4 kg $CaCO_3$ equivalent/tonne. Barneys Canyon mine personnel have reported that about 0.1 percent of all the rock to be produced will be similar to this sample.

Both the neutralization capacity and the sulfur content varied substantially in the remaining samples, indicating a mixture of acid generating, marginal or uncertain, and acid consuming rocks. Of the remaining samples tested, 6 were potentially acid generating with sulfide (or total sulfur where speciation was not done) contents ranging from 0.10 to 0.45 percent and 5 are considered to be marginally potentially acid generating based on sulfide contents of 0.05 to 0.1 percent. Generally the sulfate levels were very low. However, for three of the samples a significant portion of the sulfur had been oxidized to sulfate, suggesting that acid potential estimates, based on the total sulfur content, may overestimate the actual acid generation potential. The neutralization potential measured in potentially acid generating samples was typically low, ranging from 0 to 5.2 kg $CaCO_3$ equivalent/tonne.

Eight of the samples tested are in the range where the potential for acid generation could not be reliably concluded from the static test results. Of these, three samples are barren of sulfur and of NP, and are therefore unlikely to produce acidity regardless of the reaction kinetics.

Nine of the samples are acid consuming, with NP/AP ratios of considerably greater than 3:1. The total sulfur content was low for all these samples, ranging from <0.01 to 0.08. The NP levels were moderate, ranging from 6.4 to 40.4 kg $CaCO_3$ equivalent/tonne. According to the geologic map of the area, the host rocks contain less carbonate mineral content than the major host rocks in the North Deposit, explaining the overall lower neutralization capacity measured in this deposit.

An acid base accounting of all the waste samples indicates that there is a net acid consuming capacity with the ratio of NP/AP for all samples being 2.3:1. To ensure that the acid consuming waste is available where acid generation potential exists will require appropriate distribution and mixing of the waste rock on the waste dump.

Kinetic Testing Program

Kinetic tests (humidity cell tests) were done on four of the samples from the South and North Deposits for which the static testing results were inconclusive. The humidity cell data is provided in tabular form in Appendix B. The test cells did not develop acidic drainage. While these results do not indicate acid generation it is recommended that additional larger scale tests be performed with material of larger particle size. These tests will aid in the development of appropriate waste dumping methods.

In Summary

The geochemistry of the temporary sulfide stockpiles and waste rock from the 4 mining areas were reviewed: the existing Barneys Canyon and Melco pits, and the proposed Barneys Canyon South, North and South Deposits. The geochemical characteristics for each of the mining areas are quite different, dependant largely on the calcarious content of the host rock. Sulfide mineralization occurs mainly in the 'sulfide' rock and is generally very low in all 'oxide' rocks which are clearly distinguishable according to color. The sulfide rocks represent less than 5 percent of all waste from any one pit.

For the **Barneys Canyon deposit**, the sulfide deposit is hosted primarily in high calcareous rocks and the mine waste is highly acid consuming. The sulfide rocks are also net acid consuming though one sample was marginal. With only a small proportion (less than 5 percent) of sulfide waste distributed through the highly acid consuming oxide waste, the waste dump will not be acid generating. The available test data indicates that the temporary sulfide stockpile has a low acid generation potential and that there is sufficient alkalinity to prevent acidic drainage in the short term, i.e. for a few years prior to milling.

The **Melco deposit** is hosted in rocks with a moderate to high acid consumptive capacity and sulfide mineralization is generally low in the oxide waste. With only a small proportion (less than 5 percent) of sulfide waste distributed and blended through the moderate to high acid consuming oxide waste, the waste dump will not be acid generating. Additional sampling for static testing is recommended to confirm the spatial distribution and proportions of the waste types. The temporary sulfide stockpile will be acid generating and control measures are required, as agreed with the Division of Water Quality, to prevent acid generation or migration of contaminated drainage.

Representative samples from the **Barneys Canyon South, North Deposit;** indicated that the waste rock did not have an appreciable sulfide content. With the moderate to very high neutralization potentials measured for these wastes the waste dump will not be acid generating.

Samples from the **South Barneys Canyon, South Deposit;** indicate a ratio of acid consuming to acid generating minerals of 2.3:1. At this ratio, and using appropriate dump development and waste blending practices, a non-acid generating dump can be developed. Additional evaluation and testing is recommended to assist in the definition of the appropriate dump development.

Yours truly,

STEFFEN ROBERTSON AND KIRSTEN (CANADA) INC.

AMacG Robertson

Dr. A. MacG. Robertson, P.Eng.
Principal

AMR/073 Vancouver BC

TABLE 1
Barneys Canyon Mine, Static Testing Data

Sample ID	Sulphur (S)T	Sulphate (SO4)	Sulphide (S)	AP*	NP*	NNP*	NP/AP	Notes
BCSS-1	1.7	NA	NA	53.1	68.9	15.8	1.30	Sulphide
BCSS-3	1.55	NA	NA	48.4	249.0	200.6	5.14	Sulphide
BCSS-2	1.07	NA	NA	33.4	111.0	77.6	3.32	Sulphide
BCOX-3	1.16	NA	NA	36.3	235.0	198.8	6.48	Oxide
BCOX-2	0.03	NA	NA	0.9	212.0	211.1	226	Oxide
BCOX-1	<0.01	NA	NA	0.0	232.0	232.0	232	Oxide

Note * (kg CaCO3 equivalent/tonne)

TABLE 2
Melco Mine, Static Testing Data

Sample ID	Sulphur (S)T	Sulphate (SO4)	Sulphide (S)	AP*	NP*	NNP*	NP/AP	Notes
MCS-2	5.15	NA	NA	160.9	<0.1	-160.9	0.00	Sulphide
MSS-2	5.14	NA	NA	160.6	<0.1	-160.6	0.00	Sulphide
MSS-1	2.88	NA	NA	90.0	<0.1	-90.0	0.00	Sulphide
MCS-3	2.37	NA	NA	74.1	<0.1	-74.1	0.00	Sulphide
MCS-1	1.52	NA	NA	47.5	<0.1	-47.5	0.00	Sulphide
MSS-3	0.85	NA	NA	26.6	17.4	-9.2	0.66	Sulphide
MCOX-2	0.22	NA	NA	6.9	0.6	-6.3	0.09	Oxide
MCOX-1	0.09	NA	NA	2.8	23.2	20.4	8.25	Oxide
MSOX-3	0.05	NA	NA	1.6	84.5	82.9	54.08	Oxide
MCOX-3	0.04	NA	NA	1.3	75.7	74.5	60.56	Oxide
MSOX-2	0.02	NA	NA	0.6	4.2	3.6	6.72	Oxide
MSOX-1	0.01	NA	NA	0.3	59.0	58.7	188.80	Oxide

Note * (kg CaCO3 equivalent/tonne)

TABLE 3
Barneys Canyon South, North Deposit
Static Testing Data

Sample ID	Sulphur (S)T	Sulphate (SO4)	Sulphide (S)	AP*	NP*	NNP*	NP/AP	Notes	
NP-2	0.11	<0.01	0.11	3.4	4.7	1.3	1.37	Quartzite	
NP-3	0.03	NA	NA	0.9	63.3	62.4	67.52	Quartzite	
NW-1	0.03	NA	NA	0.9	2.1	1.2	2.24	Sandstone	
NP-1	0.02	NA	NA	0.6	35.8	35.2	57.28	Quartzite	
NW-2	0.02	NA	NA	0.6	2.3	1.7	3.68	Quartzite	
NW-7	0.02	NA	NA	0.6	6.6	6.0	10.56	Quartzite	
NW-6	0.01	NA	NA	0.3	9.9	9.6	31.68	Quartzite	
NW-8	0.01	NA	NA	0.3	24.6	24.3	78.72	Quartzite	
NP-4	<0.01	NA	NA	<0.3	28.4	28.4	94.67	clay BXA	
NP-5	<0.01	NA	NA	<0.3	552.0	552.0	1840.00	Dolomite	
NP-6	<0.01	NA	NA	<0.3	981	981.0	3270.00	Dolomite	Road Cut
NP-7	<0.01	NA	NA	<0.3	<0.1	0.0	0.00	Quartzite	Road Cut
NP-8	<0.01	NA	NA	<0.3	14.5	14.5	48.33	Quartzite	Road Cut
NP-9	<0.01	NA	NA	<0.3	913.0	913.0	3043.33	Dolomite	Road Cut
NW-10	<0.01	NA	NA	<0.3	5.3	5.3	17.67	Sandstone	
NW-3	<0.01	NA	NA	<0.3	441.0	441.0	1470.00	Dolomite	
NW-4	<0.01	NA	NA	<0.3	78.5	78.5	261.67	Quartzite	
NW-5	<0.01	NA	NA	<0.3	8.1	8.1	27.00	Sandstone	
NW-9	<0.01	NA	NA	<0.3	8.0	8.0	26.67	Quartzite	

Note * (kg CaCO3 equivalent/tonne)

TABLE 4
Barneys Canyon South, South Deposit
Static Testing Data

Sample ID	Sulphur (S)T	Sulphate (SO4)	Sulphide (S)	AP*	NP*	NNP*	NP/AP	Notes	
SS-1	8.75	NA	NA	273.4	<0.1	-273.4	0.00	Sulphide Waste Rock	
SP-5	1.01	0.17	0.84	26.3	36.0	9.8	1.37	Quartzite	
SW-2	0.79	0.4	0.39	12.2	3.9	-8.3	0.32	Clay BXA	
SW-21	0.45	<0.01	0.45	14.1	4.1	-10.0	0.29		
SW-13	0.41	<0.01	0.41	12.8	5.2	-7.6	0.41		
SW-14	0.38	<0.01	0.38	11.9	<0.1	-11.9	0.00		
SW-10	0.32	0.41	<0.01	<0.3	<0.1	0.0	0.00		
SW-8	0.28	<0.01	0.28	8.8	1.3	-7.5	0.15		
SW-16	0.23	<0.01	0.23	7.2	0.1	-7.1	0.01		
SW-4	0.13	0.07	0.06	1.9	0.8	-1.1	0.43	Clay BXA	Road Cut
SW-20	0.1	0.05	0.05	1.6	<0.1	-1.6	0.00		
SW-12	0.09	0.06	0.03	0.9	<0.1	-0.9	0.00		
SW-19	0.09	NA	NA	2.8	8.1	5.3	2.88		
SW-7	0.09	<0.01	0.09	2.8	3.0	0.2	1.07		
SW-3	0.08	NA	NA	2.5	18.8	16.3	7.52	Clay BXA	Road Cut
SW-6	0.08	<0.01	0.08	2.5	2.5	0.0	1.00		
SW-25	0.07	0.01	0.06	1.9	0.5	-1.4	0.27		
SW-23	0.06	<0.01	0.06	1.9	2.3	0.4	1.23		
SW-5	0.06	NA	NA	1.9	6.4	4.5	3.41	Clay BXA	Road Cut
SW-24	0.05	<0.01	0.05	1.6	<0.1	-1.6	0.00		
SP-6	0.04	NA	NA	1.3	38.9	37.7	31.12	Clay BXA	
SW-17	0.03	NA	NA	0.9	5.6	4.7	5.97		
SP-7	0.01	NA	NA	0.3	38.9	38.6	124.48	Quartzite	Road Cut
SP-1	<0.01	NA	NA	<0.3	<0.1	0.0	0.00	Quartzite	
SW-11	<0.01	NA	NA	<0.3	8.0	8.0	26.67		
SW-15	<0.01	NA	NA	<0.3	40.4	40.4	134.67		
SW-18	<0.01	NA	NA	<0.3	26.3	26.3	87.67		
SW-22	<0.01	<0.01	<0.01	0.0	<0.1	0.0	0.00		
SW-9	<0.01	NA	NA	<0.3	15.7	15.7	52.33		
Average				4.2	9.5	5.3	2.3	Average for waste samples only	

Note * (kg CaCO3 equivalent/tonne)

CLIENT SAMPLE I.D.: SW-2
LAB SAMPLE I.D.: 921039-3

PARAMETER	UNITS	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 14	WEEK 17	WEEK 20
Leachate Quantity	mls	108	107	102	100	99	100	90	98	108	108				
pH	pH Units	6.26	5.90	6.83	7.23	6.79	6.26	6.31	6.95	6.94	6.96	7.00	7.05	6.74	7.04
Conductivity	umhos/cm	77	231	271	381	232	174	161	95	87	72	80	60	67	87
Sulfate	mg/L	<10	14	24	57	40	36	31	18	17	11	11	<10	10	<10
Cumulative Sulfate	Total mg	0	1	4	10	14	17	20	22	24	25				
Acidity	mg/L CaCO3	<10	17	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Cumulative Acidity	Tot. mg CaCO3	0	2	2	2	2	2	2	2	2	2				
Iron (Diss.)	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	0.05	0.04	<0.03	<0.03	0.04	<0.03	<0.03	<0.03	<0.03
Cumulative Iron	Total ug	0	0	0	0	0	5	9	9	9	13				
Alkalinity	mg/L CaCO3	6	6	10	16	6	13	16	16	13	13	?13	16	6	16
pH of DI H20	pH Units	6.80	6.60	5.51	5.56	5.48	6.11	5.60	6.54	5.55	6.03				

CLIENT SAMPLE I.D.: SW-4
LAB SAMPLE I.D.: 921039-4

PARAMETER	UNITS	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 14	WEEK 17	WEEK 20
Leachate Quantity	mls	104	106	105	95	107	101	93	99	109	109				
pH	pH Units	6.53	6.53	7.10	7.33	7.05	6.56	6.40	7.11	7.08	7.10	7.10	7.18	2.78	7.15
Conductivity	umohs/cm	674	871	973	1140	763	574	460	235	184	177	150	74	1000	48
Sulfate	mg/L	74	76	86	97	25	56	47	26	21	17	15	<10	10	<10
Cumulative Sulfate	Total mg	8	16	25	34	37	42	47	49	52	53				
Acidity	mg/L CaCO3	13	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	88	<1
Cumulative Acidity	Tot. mg CaCO3	1	1	1	1	1	1	1	1	1	1				
Iron (Diss.)	mg/L	0.18	<0.03	0.03	<0.03	<0.03	<0.03	0.10	<0.03	<0.03	0.05	<0 03	<0.03	1.47	<0.03
Cumulative Iron	Total ug	19	19	22	22	22	22	31	31	31	37				
Alkalinity	mg/L CaCO3	21	15	16	26	6	23	29	23	19	19	19	19	7	19
pH of DI H2O	pH Units	6.80	6.60	5.51	5.56	5.48	6.11	5.60	6.54	5.55	6.03				
														*	

Note * may represent an analytical error, (premature preservation with HNO_3 suspected)

CLIENT SAMPLE I.D.: SP-5
LAB SAMPLE I.D.: 921039-2

PARAMETER	UNITS	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 14	WEEK 17 *	WEEK 20
Leachate Quantity	mls	133	130	122	147	134	129	136	129	130	138				
pH	pH Units	6.79	6.26	7.04	7.46	6.93	6.22	6.29	6.82	6.73	6.86	7.04	6.84	3.27	7.16
Conductivity	umohs/cm	88	130	106	71	59	76	66	72	55	40	34	40	300	48
Sulfate	mg/L	14	14	15	10	11	15	13	13	10	<10	<10	<10	<10	<10
Cumulative Sulfate	Total mg	2	4	6	7	8	10	12	14	15	15				
Acidity	mg/L CaCO3	11	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	62	<10
Cumulative Acidity	Tot. mg CaCO3	1	1	1	1	1	1	1	1	1	1				
Iron (Diss.)	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	1.29	<0.03
Cumulative Iron	Total ug	0	0	0	0	0	0	0	0	0	0				
Alkalinity	mg/L CaCO3	11	13	10	16	10	10	13	19	16	13	13	13	<5	19
pH of DI H20	pH Units	6.80	6.60	5.51	5.56	5.48	6.11	5.60	6.54	5.55	6.03				

Note * may represent an analytical error, (premature preservation with HNO_3 suspected)

CLIENT SAMPLE I.D.: NP-2
LAB SAMPLE I.D.: 921039-1

PARAMETER	UNITS	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6	WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11	WEEK 14	WEEK 17	WEEK 20
Leachate Quantity	mls	131	127	116	124	115	108	110	102	120	114				
pH	pH Units	6.19	5.86	6.51	7.04	6.53	6.06	5.88	6.48	6.46	6.48	6.33	6.60	6.64	6.61
Conductivity	umohs/cm	100	147	177	119	101	74	74	43	36	34	24	17	18	16
Sulfate	mg/L	14	12	16	19	17	15	16	<10	<10	<10	<10	<10	<10	<10
Cumulative Sulfate	Total mg	2	3	5	8	10	11	13	13	13	13				
Acidity	mg/L CaCO3	13	<10	<10	<10	<10	11	<10	15	<10	<10	<10	<10	<10	<10
Cumulative Acidity	Tot. mg CaCO3	2	2	2	2	2	3	3	4	4	4				
Iron (Diss.)	mg/L	0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.04	<0.03	<0.03	<0.03
Cumulative Iron	Total ug	8	8	8	8	8	8	8	8	8	8				
Alkalinity	mg/L CaCO3	6	<5	13	13	<5	6	6	6	6	6	18	7	6	6
pH of DI H20	pH Units	6.80	6.60	5.51	5.56	5.48	6.11	5.60	6.54	5.55	6.03				